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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/650,181

08/27/2003

Masayuki Ohta

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755 PAGE MILL RD

PALO ALTO, CA 94304-1018

EXAMINER

VAN ROY, TOD THOMAS

ART UNIT

PAPER NUMBER

2828

MAIL DATE

DELIVERY MODE

02/28/2008

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/650,181	Applicant(s) OHTA ET AL.	
	Examiner TOD T. VAN ROY	Art Unit 2828	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 22 January 2008.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1,5 and 10-15 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1,5,10-15 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>01/22/08</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 01/22/2008 has been entered.

Response to Amendment

The examiner acknowledges the amending of claims 1 and 5.

Response to Arguments

Applicant's arguments with respect to claims 1 and 5 have been considered but are moot in view of the new ground(s) of rejection.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

Art Unit: 2828

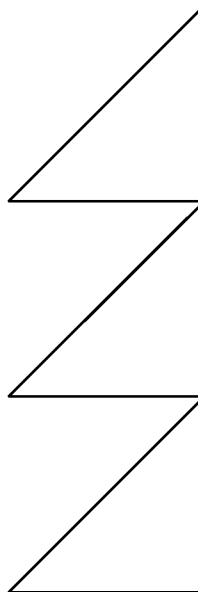
1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

Claims 1, 5, and 10-15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sugano (JP 63136687) in view of Goto (2002/001327) and further in view of Ohbuchi (US 6611542).

With respect to claim 1, Sugano teaches a method for manufacturing a semiconductor laser device, comprising the steps of: forming electrode patterns arranged in a plurality of rows (fig.1) extending in a first direction (top to bottom of figure) on an upper surface of a semiconductor wafer having at least a light emission layer (fig.3 #3), the electrode patterns having opposed to two edges extending in the first direction (left and right sides of dashed electrode patterns); cutting the resultant semiconductor wafer for a predetermined width to yield a plurality of semiconductor bars (abs.), and sectioning the semiconductor bars in desired sizes to form semiconductor laser devices each having a pair of cleavage surfaces (cleaved along dotted line), the surfaces being parallel to a second direction and distant from each other by a resonator length (abs., fig.1 L's), wherein the formed electrode patterns are continuous with each other in the first direction (fig.1), each electrode pattern including a series of markers having a periodical pattern (markers are the "C" gaps in the electrode patterns, series of markers forms periodical pattern) which is continuous one marker to the next in the first direction, the markers being formed on one or both of the edges of the electrode patterns (each formed on an edge on either side of the electrode pattern), and a

minimum unit of the periodical pattern has an overall length in the first direction equal to L/n and not greater than the resonator length (marker not greater than resonator length L), wherein L is the resonator length and n is a positive real number not smaller than one, the first direction being a direction along the resonator length, the second direction being perpendicular to the first direction and each laser device being cut or sectioned to have a length which is an integral multiple of the length of a marker (abs., marker is $1 \cdot L$), and wherein each of the markers has corners at both ends in the first direction and adjacent markers point-contact with each other at the corners of their ends (C markers point contact at their respective corners). Sugano does not teach the markers to be asymmetric in shape when bisected in the chip width direction or to point contact at a single point. Goto teaches the use of markers wherein one side of the electrode pattern is asymmetric relative to the other (fig.5, indented shoulder portion near arrow 19a). Ohbuchi teaches a semiconductor laser device with electrode markers wherein it is taught that markers are of an isosceles triangle, or saw tooth, shape (fig.1). It would have been obvious to one of ordinary skill in the art at the time of the invention to combine the electrode pattern of Sugano with the asymmetric electrode pattern of Goto in order to distinguish forward and backward device directions (Goto, [0028]), as well as to replace the rectangular markers of Sugano and Goto with the isosceles, saw tooth, markers of Ohbuchi as a matter of engineering design choice, since the shape of the marker is not crucial, only that it has distinguishable dimensions (Ohbuchi, col.8 lines 12-14, col.3 lines 39-45), which when added to Sugano would create asymmetric markers when bisected in a chip width direction).

Essentially Sugano teaches the use of continuous patterns to allow for a choice of resonator length. Ohbuchi teaches a triangular or saw-tooth pattern, and that the actual shape of the pattern is more or less unimportant as long as it is clearly distinguishable. Goto then teaches the pattern to be asymmetric in order to tell one end of the resonator direction from the other. We are finally left with a pattern looking similar to the following:



This keeps in line with Sugano's teaching that the ends of the electrode patterns are thin so that fewer problems occur during the cleaving process.

With respect to claims 5 and 14-15, Sugano teaches a semiconductor laser device, comprising: a semiconductor layer portion including at least a light emission layer (fig.3 #3) and a pair of cleavage surfaces the surfaces being parallel and distant from each other by a resonator length (fig.1 cleaved along dotted line); and an electrode pattern piece formed on an upper surface of the semiconductor layer portion (fig.1

dashed lines), the electrode pattern piece having opposed two first edges extending in a first direction (fig.1 top and bottom) and opposed two second edges extending in a second direction along the pair of cleavage surfaces (fig.1 left and right), wherein the two second edges come in contact with the pair of cleavage surfaces (fig.1 cleaved along dotted line, so in contact with the surface), each electrode pattern piece including a series of markers having a periodical pattern formed on one or both of the first edges (markers are the "C" gaps in the electrode patterns, series of markers forms periodical pattern, each formed on an edge on either side of the electrode pattern), a minimum unit of the periodical pattern having an overall length in the resonator length direction equal to L/n and not greater than a resonator length, wherein L is the resonator length and n is a positive number not smaller than 1 (markers not greater than resonator length), the first direction being a direction along the resonator length, wherein the markers can be used to form laser chips of different resonator lengths, and wherein each of the markers has corners at both ends in the first direction and adjacent markers point-contact with each other at the corners of their ends (C markers point contact at their respective corners). Sugano does not teach the markers to be asymmetric in shape when bisected in the chip width direction or to point contact at a single point. Goto teaches the use of markers wherein one side of the electrode pattern is asymmetric relative to the other (fig.5, indented shoulder portion near arrow 19a). Ohbuchi teaches a semiconductor laser device with electrode markers wherein it is taught that markers are of an isosceles triangle, or saw tooth, shape (fig.1). It would have been obvious to one of ordinary skill in the art at the time of the invention to

combine the electrode pattern of Sugano with the asymmetric electrode pattern of Goto in order to distinguish forward and backward device directions (Goto, [0028]), as well as to replace the rectangular markers of Sugano and Goto with the isosceles, saw tooth, markers of Ohbuchi as a matter of engineering design choice, since the shape of the marker is not crucial, only that it has distinguishable dimensions (Ohbuchi, col.8 lines 12-14, col.3 lines 39-45), which when added to Sugano would create asymmetric markers when bisected in a chip width direction).

With respect to claim 10, Sugano teaches the marker length is between $1/5$ and 5 times the width (fig.1 length approx. 2 times the width).

With respect to claim 11, Sugano teaches the wafer is cut in predetermined widths to yield a plurality of semiconductor bars extending in the resonator length direction, and the plurality of semiconductor bars are cut in predetermined resonator lengths (fig.1, abs.)

With respect to claim 12, Sugano teaches the ability to cut the semiconductor bars into different resonator lengths, yielding a plurality of different semiconductor laser devices (abs.).

With respect to claim 13, Sugano teaches one of the semiconductor bars is cut in integral multiple lengths of the overall length of the marker (abs.).

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to TOD T. VAN ROY whose telephone number is (571)272-8447. The examiner can normally be reached on M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Minsun Harvey can be reached on (571)272-1835. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

/TVR/

/Minsun Harvey/
Supervisory Patent Examiner, Art Unit 2828